



**Tri-Party Agreement Project Manager (PM) Agreement for Single-Shell Tank (SST)  
Retrievals Completion Final Sampling**

The Washington State Department of Ecology (Ecology) and the U.S. Department of Energy Office of River Protection (ORP) have discussed Retrieval Data Report Sampling for SST retrieval on both January 10<sup>th</sup> and January 17<sup>th</sup>, 2013. On January 10<sup>th</sup> Ecology and ORP agreed on a new drag sampler for C-107 completion, developing a sampling design for residual waste in tank C-104, reducing the list of organic analytes using existing data for the remainder of C-Farm, and sampling locations for tank C-104 RDR sampling. ORP and Ecology have also agreed with the *Single-Shell Tank Component Closure DQO* RPP-23403 revision 5, and *Sampling and Analysis Plan for Single-Shell Tanks Component Closure* RPP-PLAN-23827 revision 3. This signed agreement directs ORP to initiate both the DQO and SAP per the attached attachment.

Michelle W. Brown for Date 1-22-13  
Jeff Lyon, Tank Farms PM  
Nuclear Waste Program  
Department of Ecology  
State of Washington

Chris Kemp Date 1/22/13  
Chris Kemp, Tank Farms PM  
Tank Farms Project  
Office of River Protection  
Department of Energy

## RDR SAMPLING MEETING NOTES

LOCATION: Ecology  
DATE: January 10, 2013

### Attendees:

Mike Barnes	Ecology
Beth Rochette	Ecology
Jerry Yokel	Ecology
Jacob Reynolds	WRPS <i>JR</i> 1/16/13
Duc Nguyen	WRPS <i>DN</i> 1/16/13

### Additional Distribution:

Jeff Lyon	Ecology
Chris Kemp	ORP
Mike Peloquin	WRPS
Susan Eberlein	WRPS
Chris Burke	WRPS

### Meeting Agenda

- Including a new sampler (drag sampler) in the Retrieval Data Report (RDR) data quality objectives (DQO) and sampling and analysis plan (SAP)
- Developing a sampling design for residual waste in tank C-104
- Reducing the list of organic analytes using the existing data.

### Results of discussion

- The drag sampler is planned to be deployed with the Mobile Arm Retrieval System in C-107 and C-105. The attendees agreed to include the drag sampler in the DQO and SAP.
- Most of the residual waste in C-104 is located in two areas; therefore, sampling should focus on these areas. It was agreed that a sampling design specific to this tank should be developed. The attendees agreed on the following sampling design: two samples from each area for a total of four samples; duplicate analyses will be performed on one sample and single analysis on the remaining three samples for a total of five analyses. The samples will be taken using the Off-Riser Sampling System (ORSS).
- Organic compounds that have been detected in C Farm tank residual solids samples were summarized and discussed (see Attachment). The attendees agreed that when sampling the residual solids in the remaining C Farm tanks to support RDRs, only the detected organics will be analyzed with the exception of phthalates because phthalates were judged to be contaminants from plastic ware used at the laboratory.

Residual waste in tanks to be retrieved after C Farm will be analyzed for the organics listed in the current DQO (RPP-23403, Rev 4) and SAP (RPP-PLAN-23827 Rev 2). The list will be re-evaluated for reduction after collecting organic data from a small number of tanks in a tank farm.

- The DQO, SAP, and the C-104 tank-specific SAP will be revised to reflect these changes. The changes will be discussed and approved at the next Tri-Party Agreement Project Managers meeting. Ecology's approval will be documented as part of the meeting log.

## ATTACHMENT

### Detected Organic Compounds in C Farm Tank Residual Solids Samples (As of 1-10-13)

Detected Compound	Found in Tank Residual	Additional Information
Phthalates (butylbenzylphthalate, di-n-butylphthalate, di-n-octylphthalate)	C-106, C-103, C-204	<ul style="list-style-type: none"> <li>• Significant levels in the laboratory blanks. Most likely due to contamination from plastic ware.</li> <li>• All results are J flagged (near laboratory DLs)</li> </ul>
Acetone	C-106, C-201, C-203, C-202, C-103, C-204	<ul style="list-style-type: none"> <li>• Observed occasionally in laboratory blanks.</li> <li>• All results are J flagged.</li> </ul>
2-butanone (MEK)	C-106, C-201, C-203, C-202, C-103, C-204	<ul style="list-style-type: none"> <li>• Observed occasionally in laboratory blanks.</li> <li>• All results are J flagged.</li> </ul>
Hexone (4-methyl – 2pentanone or MIBK)	C-201, C-202, C-202	All results are J flagged.
Tributyl phosphate	C-103, C-204	Detected at high concentrations
Trichloroethene	C-201	Only one detected result; J flagged
Xylenes	C-203	All results are J flagged.
Acetate	C-203, C-202, C-103, C-108	All results are J flagged.
Formate	C-203, C-202, C-103, C-108	All results are J flagged.
Oxalate	C-106, C-103, C-108	All results are J flagged (except for one from C-106). C-106 MDL was high.
PCB	C-106, C-108	All results are J flagged.

Table 4. Primary Organic Analytes – Requirements for Remaining C Farm Tanks<sup>1</sup>

Organic Analyte	CAS Number	Analysis Method
1,1,2-Trichloroethylene	79-01-6	Method 8260 for VOA
2-Butanone (MEK)	78-93-3	Method 8260 for VOA
2-Propanone (Acetone)	67-64-1	Method 8260 for VOA
4-Methyl-2-pentanone (MIBK)	108-10-1	Method 8260 for VOA
Xylenes (Mixed isomers of o-, m-, and p-)	1330-20-7	Method 8260 for VOA
o-Xylene	95-47-6	Method 8260 for VOA
m-Xylene <sup>2</sup>	108-38-3	Method 8260 for VOA
p-Xylene <sup>2</sup>	106-42-3	Method 8260 for VOA
Tributyl phosphate	126-73-8	Method 8270 for SVOA
PCB	N/A	Method 8082 for Aroclors

Abbreviations: CAS= Chemical Abstracts Service; VOA=volatile organic analysis; SVOA=semivolatile organic analysis, PCB=polychlorinated biphenyls; N/A=not available

Notes:

<sup>1</sup>Remaining C Farm tanks are 241-C-101, 241-C-102, 241-C-104, 241-C-105, 241-C-107, 241-C-109, 241-C-110, 241-C-111, and 241-C-112.

<sup>2</sup>m-xylene and p-xylenes will be analyzed together as xylenes (m+p).

Table 4-3. Primary Organic Analytes – General Requirements

Primary VOA analytes	CAS	Primary SVOA analytes	CAS
1,1,1-Trichloroethane	71-55-6	2-Methylphenol (o-cresol)	95-48-7
1,1,2,2-Tetrachloroethene	127-18-4	Butylbenzylphthalate	85-68-7
1,1,2,2-Tetrachloroethane	79-34-5	2,4,5 Trichlorophenol	95-95-4
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2,4,6-Trichlorophenol	88-06-2
1,1,2-Trichloroethane	79-00-5	2,6-Bis(tert-butyl)-4-methylphenol	128-37-0
1,1,2-Trichloroethylene	79-01-6	2-Chlorophenol	95-57-8
1,1-Dichloroethene	75-35-4	2-Ethoxyethanol	110-80-5
1,2-Dichloroethane	107-06-2	4-Methylphenol (p-cresol)	106-44-5
Chloroethene (vinyl chloride)	75-01-4	Acenaphthene	83-32-9
2-Butanone (MEK)	78-93-3	Cresylic acid (cresol, mixed isomers)	1319-77-3
2-Nitropropane	79-46-9	Cyclohexanone	108-94-1
2-Propanone (Acetone)	67-64-1	Di-n-butylphthalate	84-74-2
4-methyl-2-pentanone (MIBK)	108-10-1	Di-n-octylphthalate	117-84-0
Benzene	71-43-2	N-nitroso-di-n-propylamine	621-64-7
Carbon disulfide	75-15-0	Fluoranthene	206-44-0
Carbon tetrachloride	56-23-5	o-Nitrophenol	88-75-5
Chlorobenzene	108-90-7	p-Chloro-m-cresol (4-Chloro-3-methylphenol)	59-50-7
Chloroform	67-66-3	m-Cresol (3-Methylphenol)	108-39-4
Dichloromethane (methylene chloride)	75-09-2	Pyrene	129-00-0
Ethyl acetate	141-78-6	N-Nitrosomorpholine	59-89-2
Ethylbenzene	100-41-4	1,2,4-Trichlorobenzene	120-82-1
Diethyl ether	60-29-7	2,4-Dinitrotoluene	121-14-2
Toluene	108-88-3	Hexachloroethane	67-72-1
trans-1,3-Dichloropropene	10061-02-6	Hexachlorobutadiene	87-68-3
Trichlorofluoromethane	75-69-4	Nitrobenzene	98-95-3
Xylenes	1330-20-7	Naphthalene	91-20-3
o-Xylene	95-47-6	o-Dichlorobenzene	95-50-1
m-Xylene	108-38-3	Pyridine	110-86-1
p-Xylene	106-42-3	Isobutanol <sup>1</sup>	78-83-1
--	--	n-Butyl alcohol (1-butanol) <sup>1</sup>	71-36-3
--	--	Tributyl phosphate	126-73-8

Notes:

<sup>1</sup>Included in VOA list in RPP-23403, but will be analyzed by SVOA.

CAS = Chemical Abstracts Service.

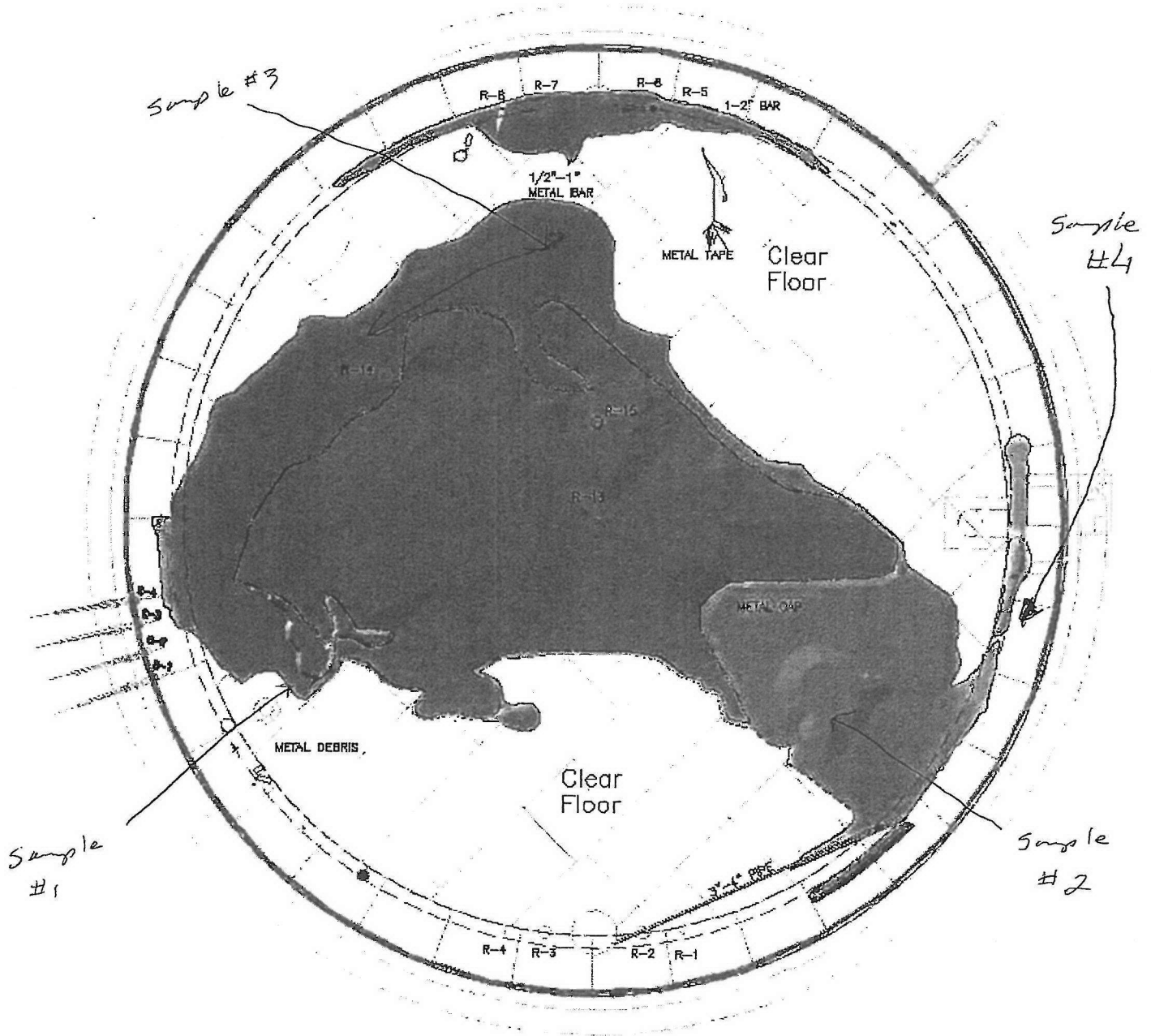
SVOA = semivolatile organic analysis.

VOA = volatile organic analysis.

- Preferred locations for C-104 Retrieval Data Report Sampling.

1-17-13

- May require several "drags" for Off Riser Sampling System at each location.



C-104 after retrieval